



# **Digitalisation Strategies: Building sustainable, ethical, inclusive, digital societies**

**Turkmenistan ICT Conference and Exhibition**

9<sup>th</sup> – 10<sup>th</sup> November, 2023

## **Enabling Digital Inclusion and Transformation**



**ICT and Development Section**

**ICT and Disaster Risk Reduction Division**

**United Nations Economic and Social Commission  
for Asia and the Pacific (UN ESCAP)**

# Outline

1. What is Digital Inclusion and Transformation?
  - The Overall Problem and Solution
  - Digital Transformation Landscape
2. Specific Challenges
  - Digital Divide and Internet Speed
  - Affordability
  - Accessibility
  - NCA Case Studies
  - Implication of Current Challenges
3. ESCAP Tools and Frameworks for Digital Inclusion and Transformation
  - Connectivity Tools and E-Resilience
  - Best Practices: KFCC and Huawei
4. Ways Forward to ensure Digital Inclusion and Transformation under APIS Action Plan 2022-2026

# Digital Inclusion and Transformation

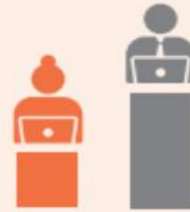
## What is Inclusion?

*“Equitable, meaningful, and safe access to use, lead, and design of digital technologies, services, and associated opportunities for everyone, everywhere”.*

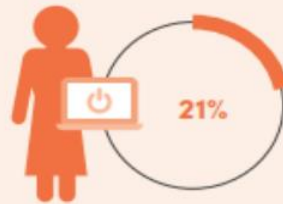
**Digital transformation** is not only about transitioning to and developing digitalized ecosystems, but also about **inclusivity**, which can help prevent digital divide.

**Who is Excluded?** Digital divide is predominantly witnessed between gender and rural versus urban areas.

Investing in digital inclusion while also developing digital transformation can help bridge the digital divide.



Women are **2X** less likely than men to know how to write a **COMPUTER PROGRAMME**



Women hold less than **25%** of **SCIENCE, ENGINEERING and ICT JOBS** globally

In 2020, global averages for Internet use were **62 % for all men and 57 % for all women**, irrespective of age, income or geography

Women are **30 to 50 % less** likely than men to use the Internet to participate in public life

UNCDF’s investment in digital and financial solutions for **inclusive digital transformation** in Asia saw improved digital literacy, regulations, and services for both **men and women**

China’s Universal Service Project invested over **USD 6 billion** promoting telephone communication in **133 000 villages** which now have **access to high-speed fixed broadband**

Fijian Government has invested in and launched several **apps and other initiatives for digital and financial inclusion**. E.g., digitalFiji, M-PAiSA, PacFarmer

# Challenges and Solutions

## Challenges

- Lack of Infrastructure Development
- Poor Digital Literacy
- Poor socio-economic indicators

DIGITAL EXCLUSION

- Excluding Women and Girls
- Widening gap between rural and urban areas

- Financial Exclusion
- Poor resilience towards climate change

**Digital Transformation**  
(or lack thereof)  
impacts accessibility  
and affordability

**Widening Digital Divide**

**Bridging Digital Divide**

## Solution

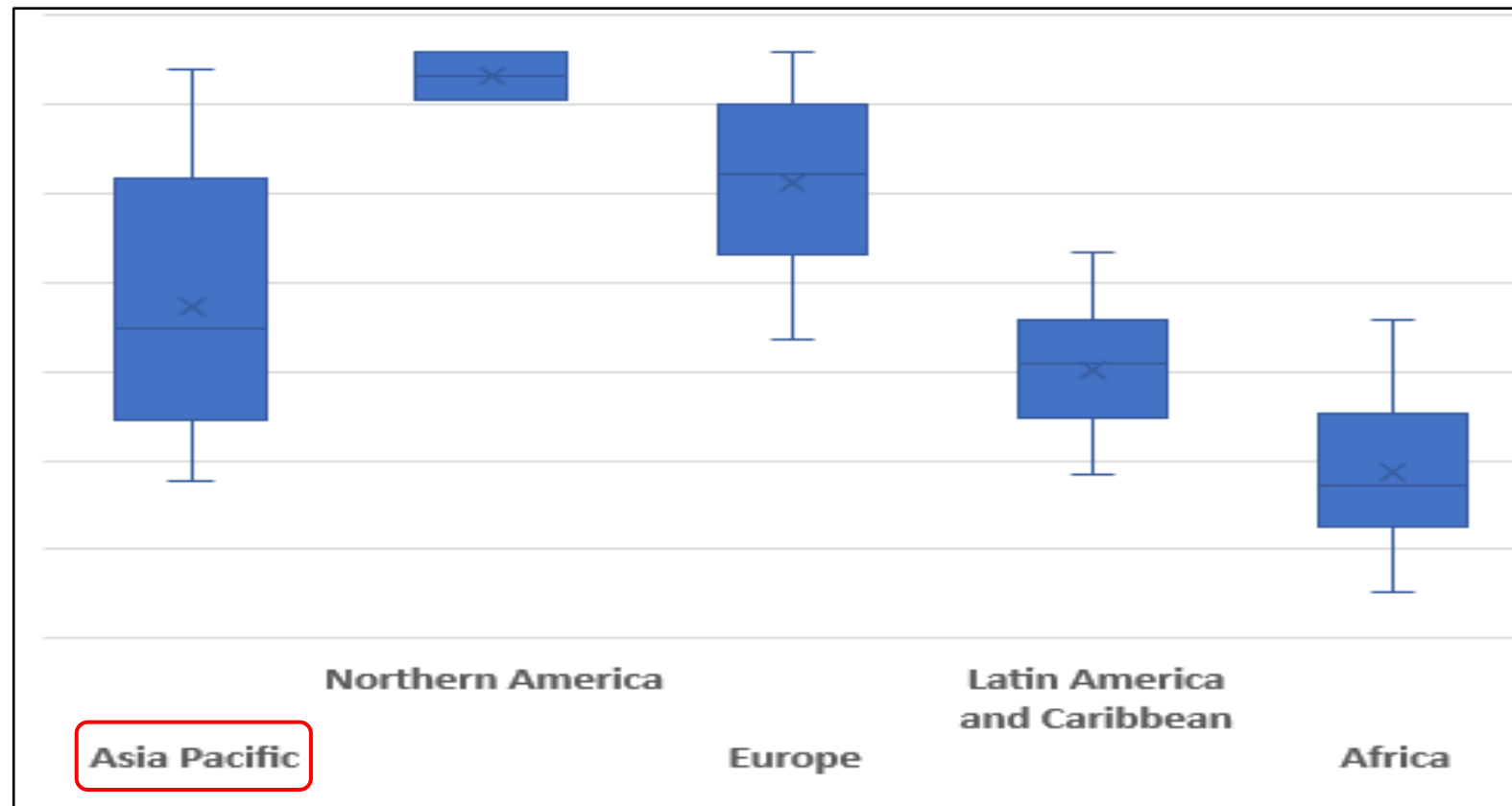
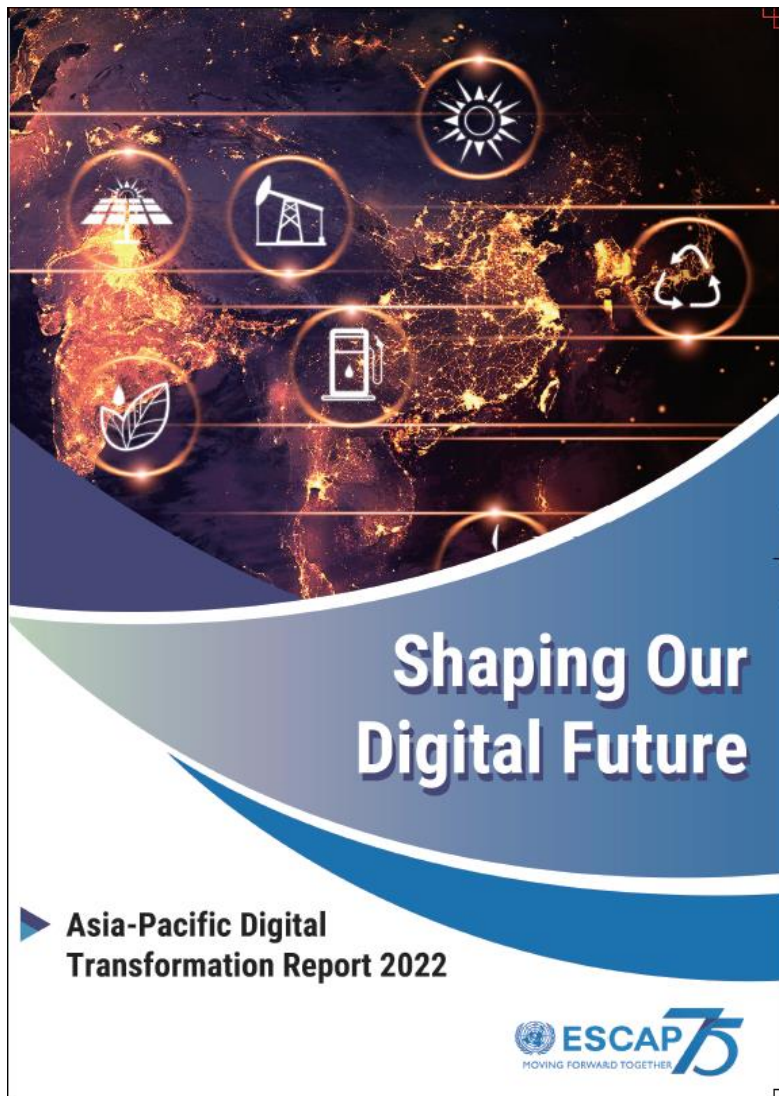
- Build critical Infrastructure
- Develop Digital Literacy
- Improve socio-economic indicators

DIGITAL INCLUSION

- Reaches and Empowers Women and Girls
- Efforts to bridge rural and urban gap

- Financial Inclusion through Digital Tools
- Developing Tools to enhance Climate Change Resilience

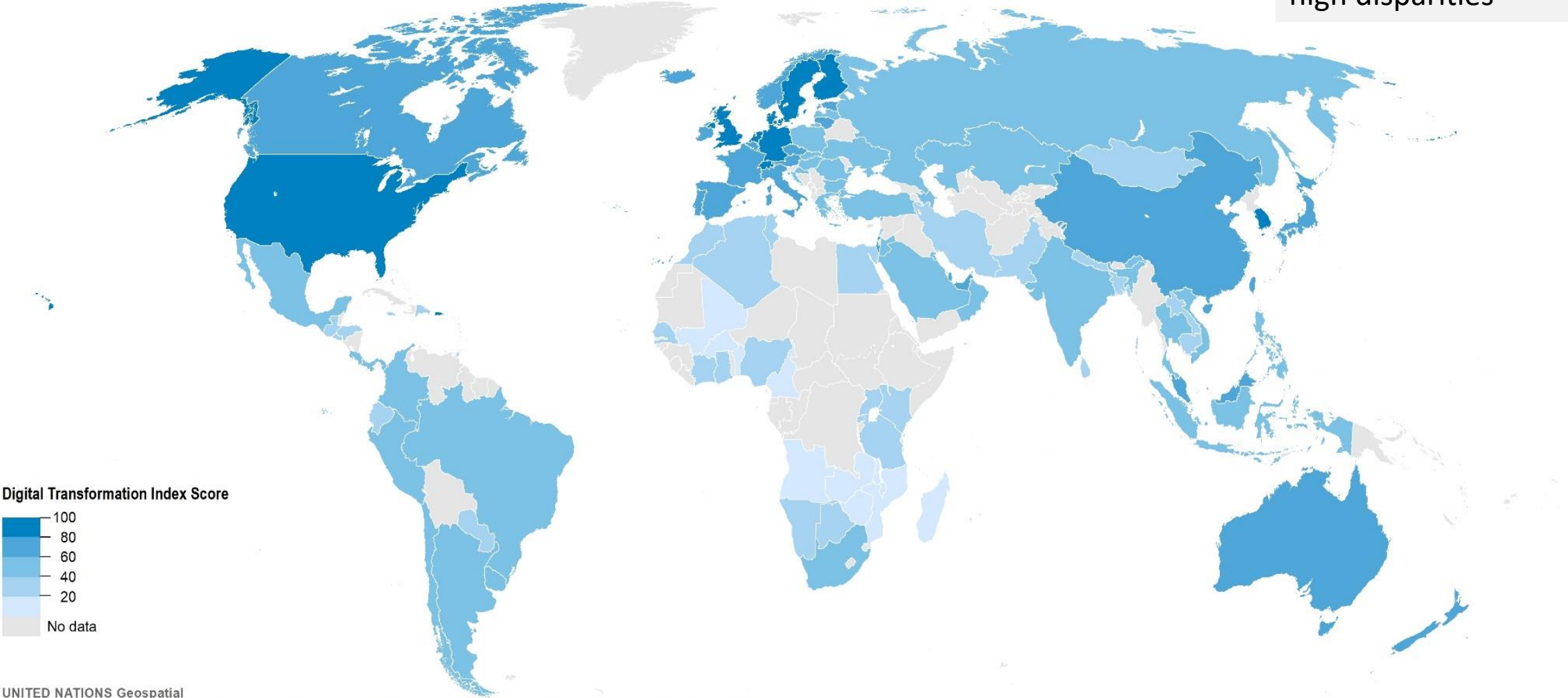
# Asia-Pacific Digital Transformation Landscape



Asia-Pacific is the **most digitally divided** in the world

# Disparity in Global Digital Transformation

North America and Europe have high index of digital transformation while Asia and Pacific have a varied level with high disparities

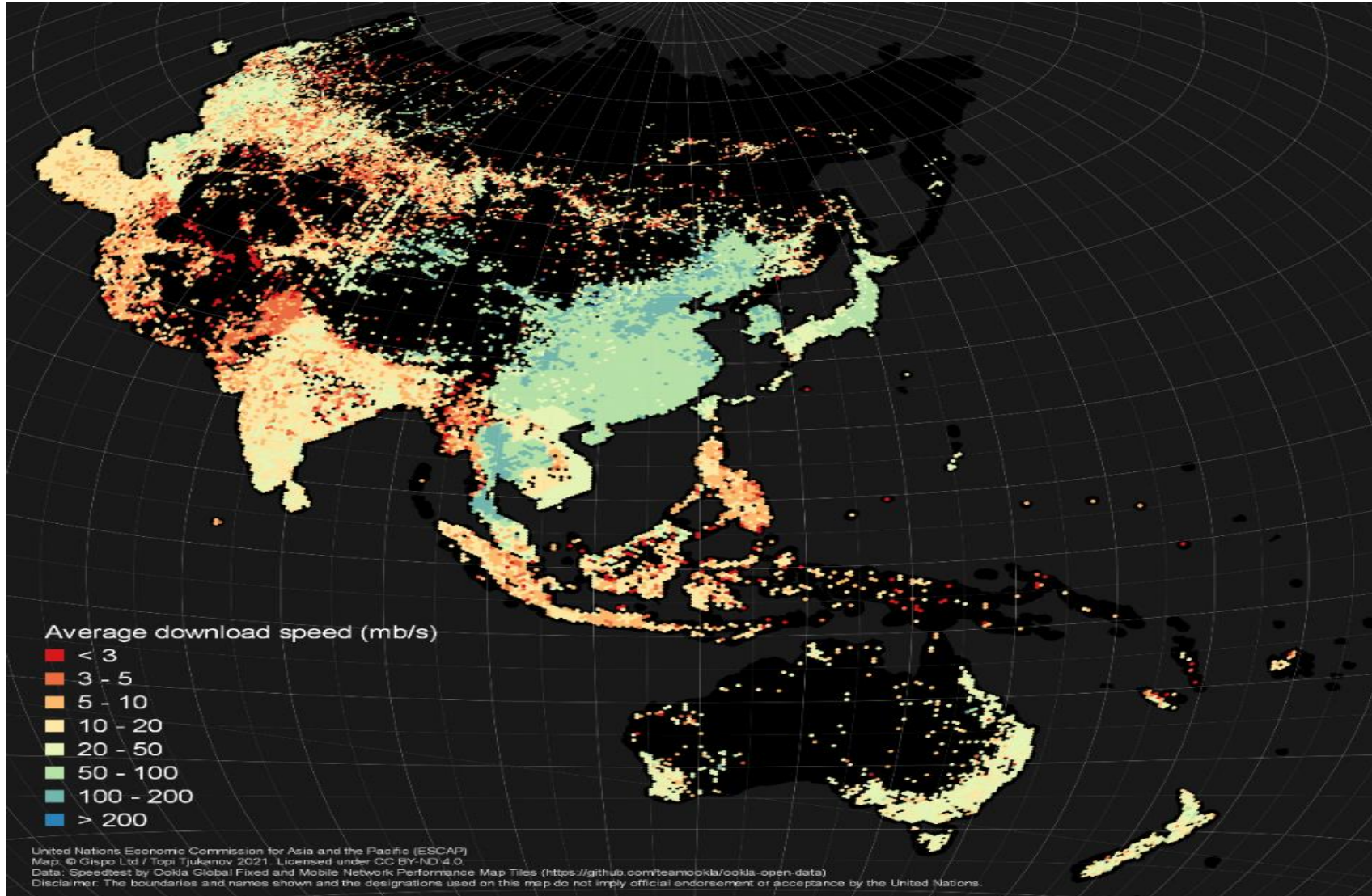


UNITED NATIONS Geospatial

The boundaries and names shown and the designations used on this map do not imply official endorsement or acceptance by the United Nations.  
Dotted line represents approximately the Line of Control in Jammu and Kashmir agreed upon by India and Pakistan. The final status of Jammu and Kashmir has not yet been agreed upon by the parties.  
Final boundary between the Republic of Sudan and the Republic of South Sudan has not yet been determined.  
A dispute exists between the Governments of Argentina and the United Kingdom of Great Britain and Northern Ireland concerning sovereignty over the Falkland Islands (Malvinas).



# Disparity in Internet Speed



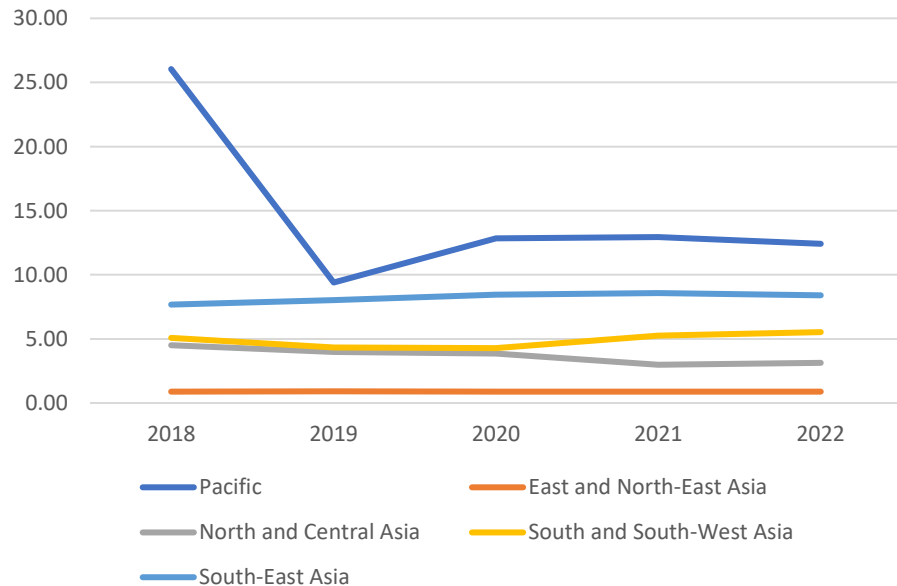
Fixed broadband speed gaps, based on real-time aggregated Internet usage:

- Central Asia appears to have low average download speed compared to some part of East Asia
- However, disparities remain across the region

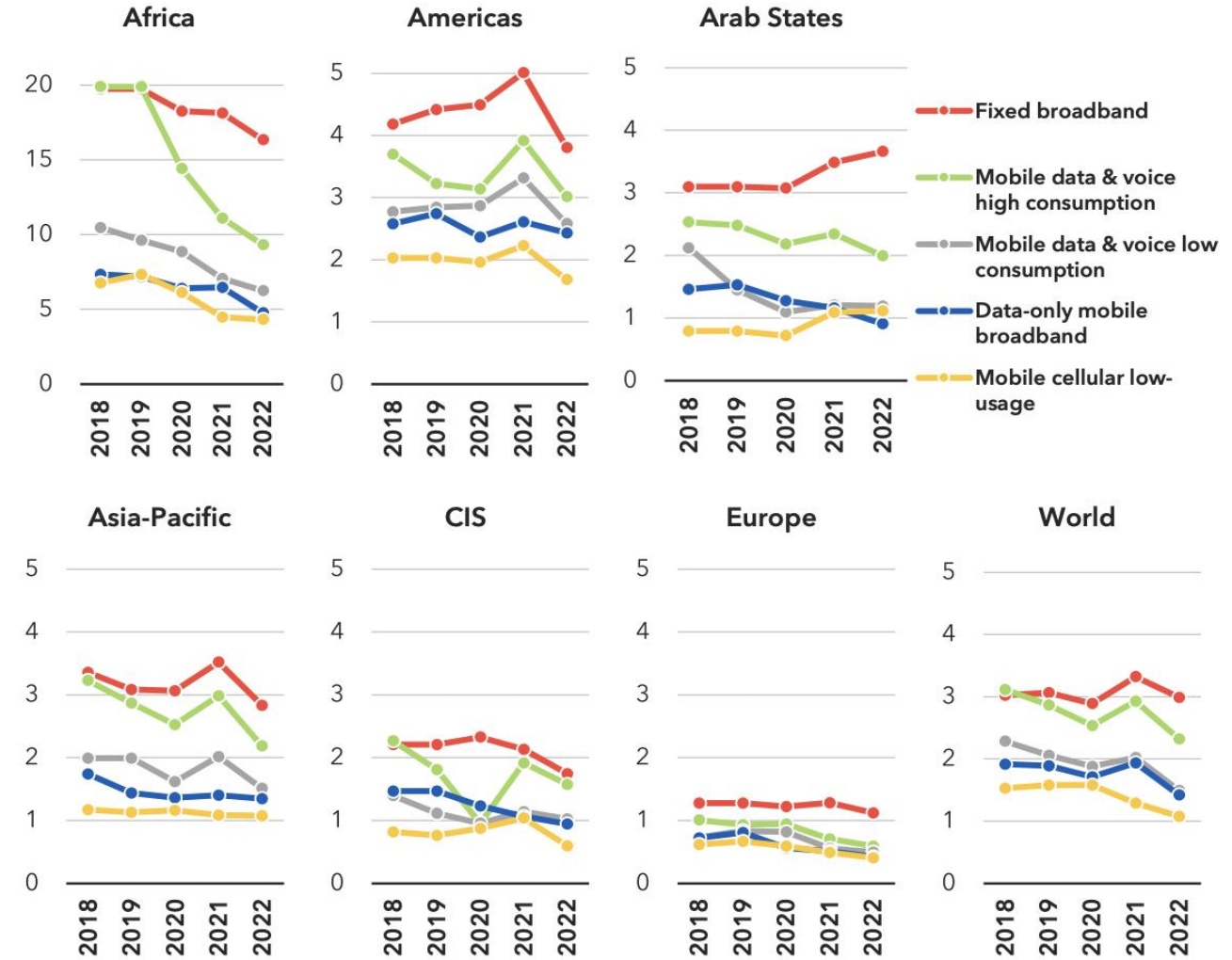
# Challenges: Affordability

- Asia and Pacific region have not achieved the 2% affordability target in 2022 in fixed-broadband basket prices
- East and North-East Asia outperforms others on costs of only 0.89% of the GNI per capita for fixed-broadband service
- South and South-West Asia and the Pacific require more effort to achieve the goal with service costs as high as 5.53% of the GNI per capita in South and South-West Asia, and 12.41% of the GNI per capita in the Pacific

**Fixed-broadband basket prices by ESCAP Subregions from 2018 to 2022, % of GNI per capita**



% of GNI per capita



Note: Regions correspond to the [regional grouping](#) of the ITU Telecommunication Development Bureau (BDT). Median values shown in the chart were calculated as a percentage of GNI per capita for the set of economies for which data was available for all the years between 2018 and 2022 for a given basket in order to clean the effect of changing data availability.

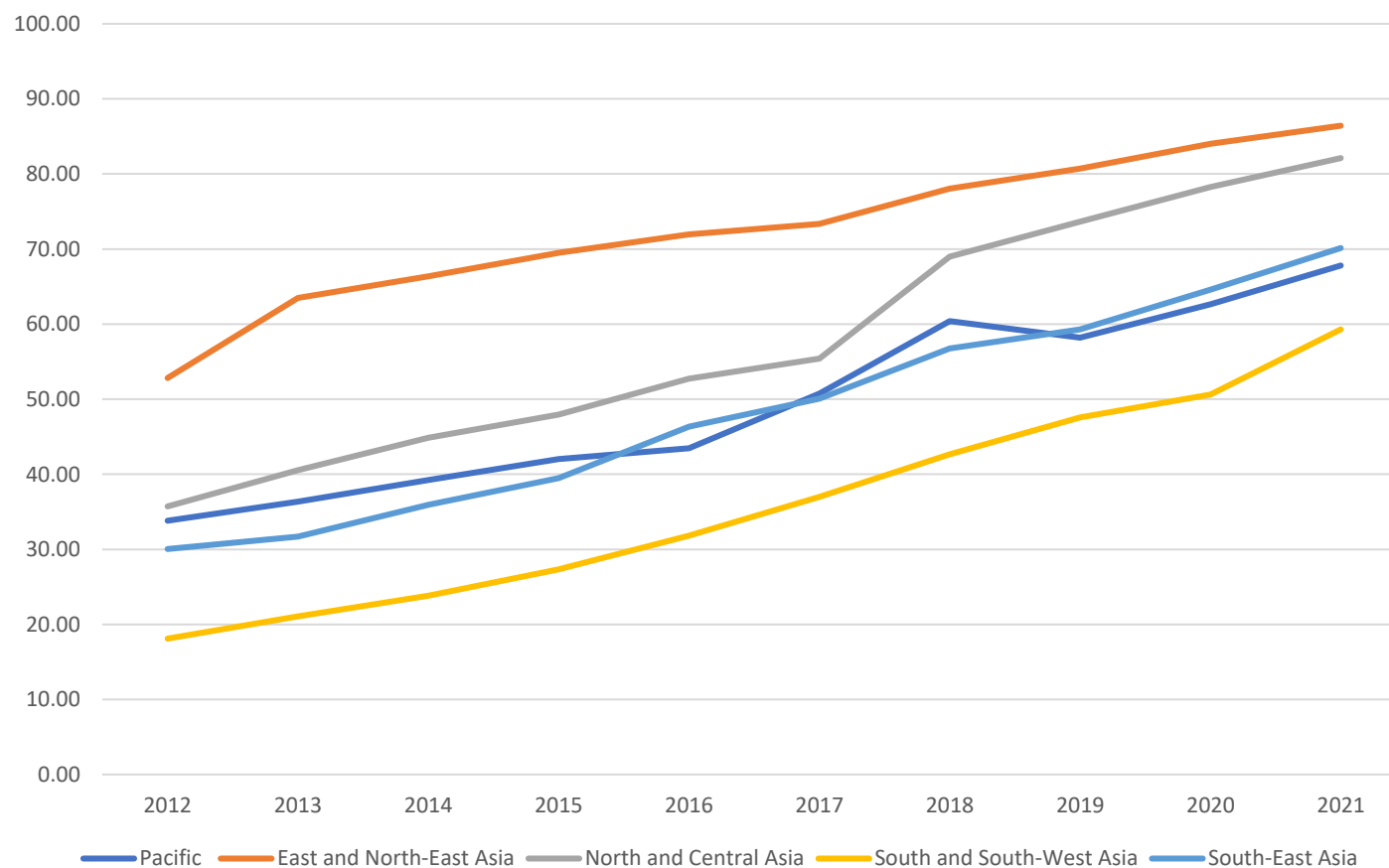
Source: ITU



# Challenges: Accessibility

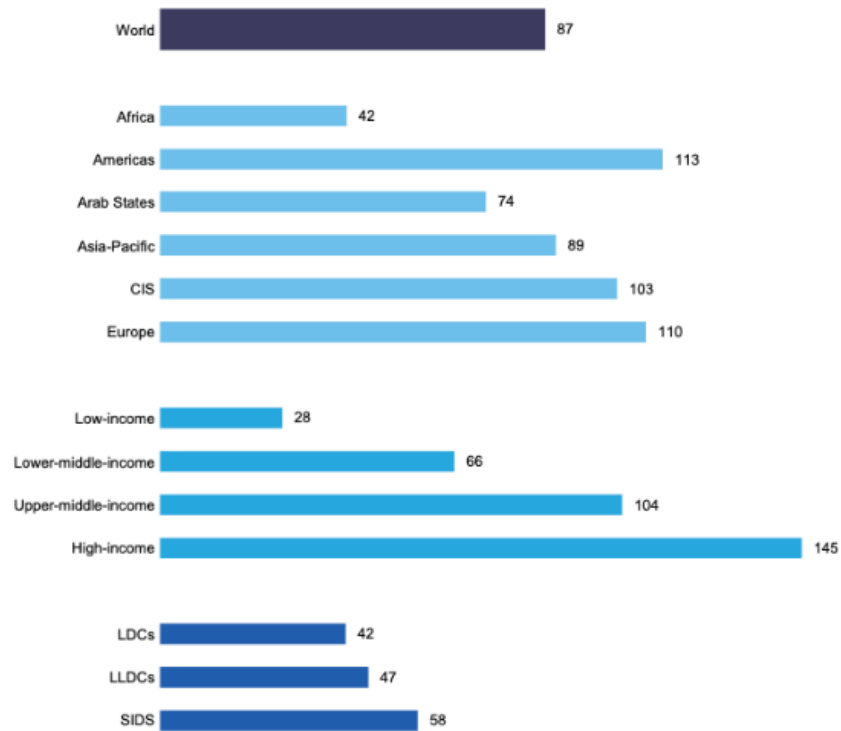
- Asia Pacific region has 89 active mobile-broadband subscriptions per 100 inhabitants – higher than the global average of 87 in 2022
- Percentage of individuals using internet (Access) in the Asia Pacific region has increased from 42.7% in 2018 to 64.3% in 2022 (albeit remaining below the global average of 66.3%)
- Percentage of individuals using the internet in East and North-East Asia was 86.4% in 2021. In South and South-West Asia the percentage was 59.3% in 2021

Individuals using the Internet by ESCAP subregions from 2012 to 2021, %



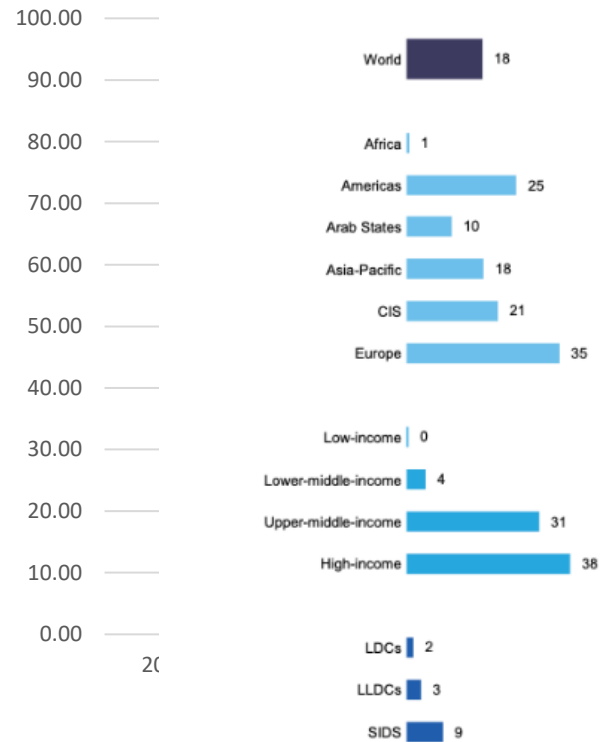
# Challenges: Accessibility

## Active mobile-broadband subscriptions per 100 inhabitants, by region, 2022



Source: ITU

## Fixed-broadband subscriptions per 100 inhabitants, by region, 2022

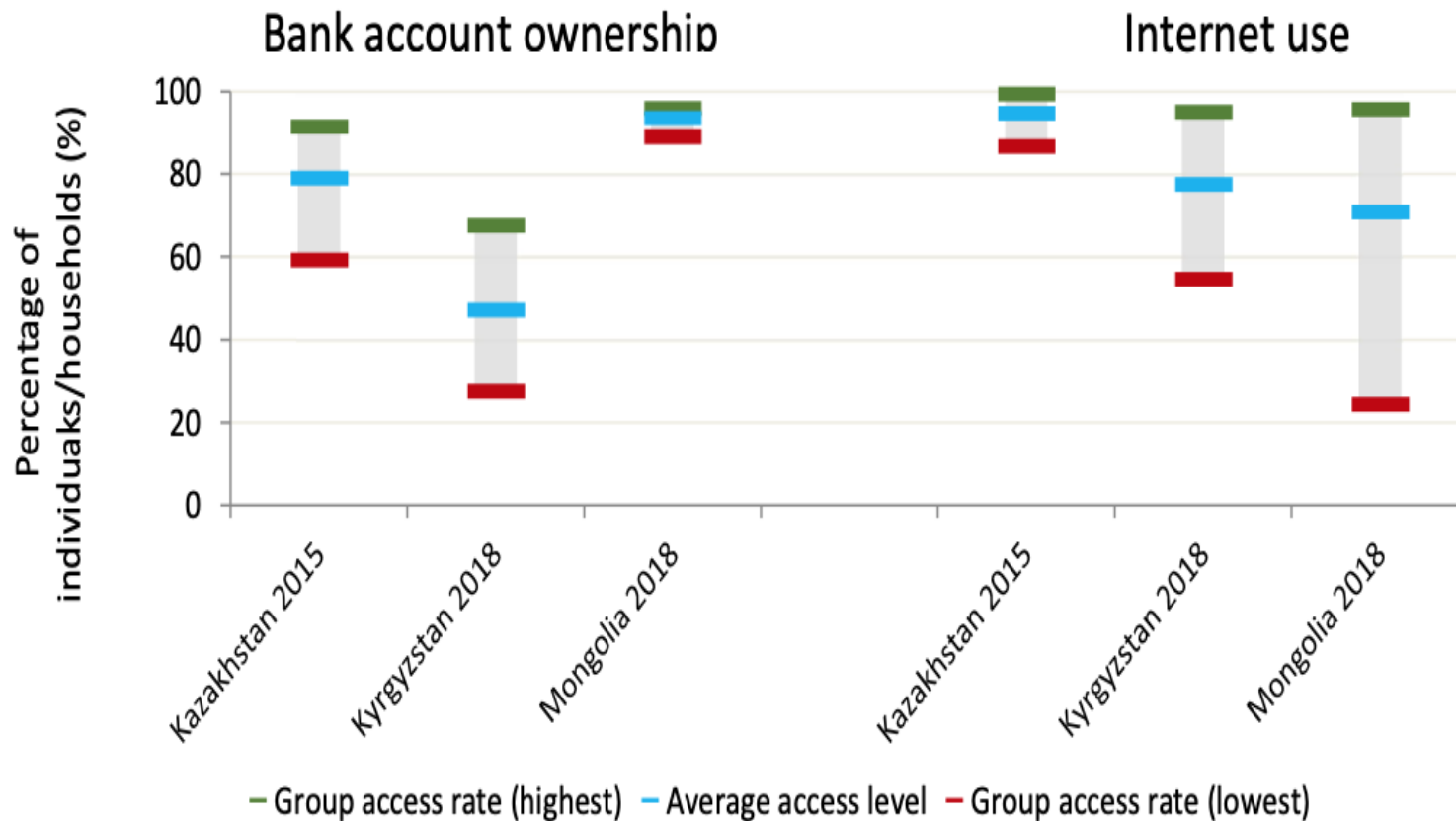


Source: ITU

- As suggested
- Percentage of the world's population
- Percentage of the world's population



# Disparities in Financial Inclusion

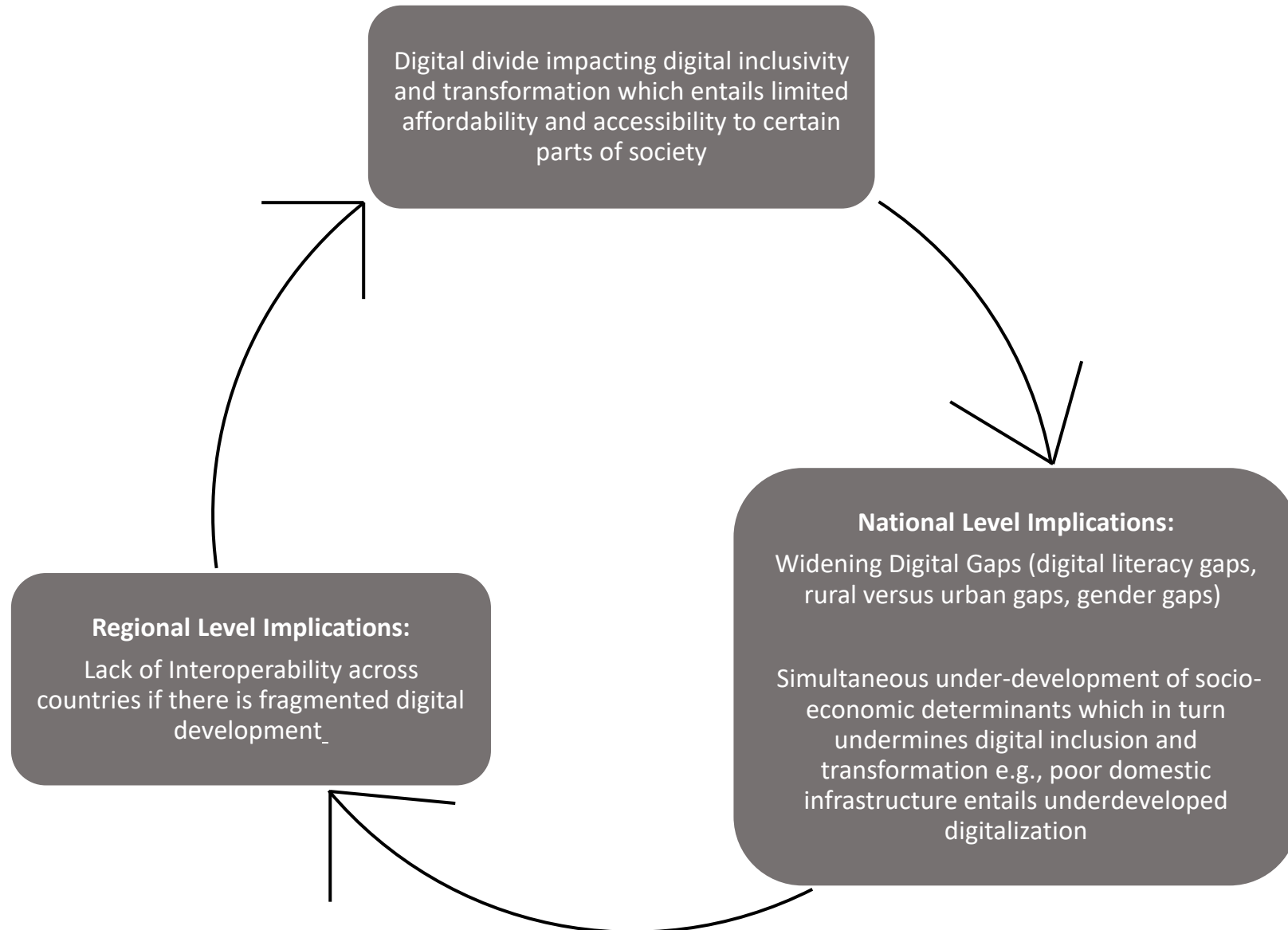


Source: ESCAP elaboration using data from the latest MICS surveys for Kazakhstan, Kyrgyzstan and Mongolia.

- Bank account ownership and internet usage portray inclusivity and accessibility to digital opportunities
- Significant disparities within and across countries are observed
- Demographic factors are determinants of disparities too
- Kazakhstan improved its performance indicators in ten years, from 46 in 2010 to 28 in 2022 on the e-Gov Index, shifting towards a digital government services and using blockchain technology, space application systems

(Source: Mr. Rustem Bigari, Chief Executive Director, Digital Government Support Center, Kazakhstan, SPECA Workshop November 2023)

# Implication of Challenges at Societal, National and Regional Levels





# ESCAP is Mandated to Enable Digital Inclusion and Transformation

## 1. Asia-Pacific Digital Ministerial Conference in October 2024, Kazakhstan (Inter-governmental policy dialogues)

- Asia Pacific Digital Ministerial Conference, Seoul, Republic of Korea, 10 November 2022

### 2024:

- Astana, Kazakhstan, around August 2024

## 2. Operation of Asia-Pacific ICT Network (Technical-level cooperation)

- Regional cooperative mechanism on ICT
- APIS Action Plan 2022-2026 (ESCAP resolution 79/10 in May 2023)
- Operation of the Asia-Pacific Information Superhighway (APIS) Initiative through Working Groups

## 3. Institutional capacity building for Member States (Projects and programs)

- Internet Exchange Points in the Pacific
- Project on digital and transport connectivity for rural communities
- Cross-border Data Sharing in Central Asia
- E-resilience monitoring for ICT infrastructure
- Pilot project on central bank digital currency (CBDC) in the Maldives
- Project on Clean Air for Sustainable ASEAN (CASA)
- The Women ICT Frontier Initiative (WIFI)

## 4. Asia-Pacific Digital Transformation Report (Analysis and Research)

- [Flagship report] First Asia Pacific Digital Transformation Report 2022
- Deepen our understanding of the rapid and complex digital transformation process.
- Draw insights for policy development by identifying and sharing good practices
- Highlight regional cooperative actions
- 2024 Digital for Climate Change.

# ESCAP Connectivity Tools and E-Resilience

## Five Pillars of e-resilience



Infrastructure



Hazard & Exposure



New Systems and Apps



Digital Data



Policies



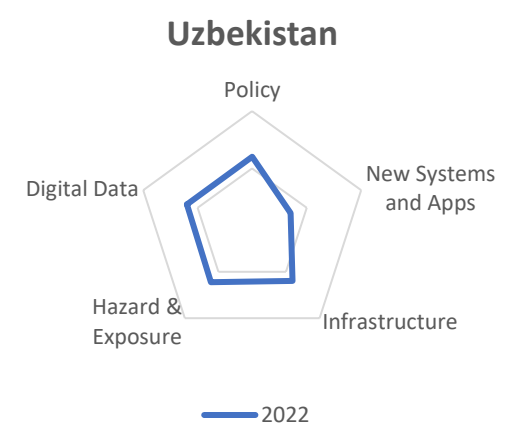
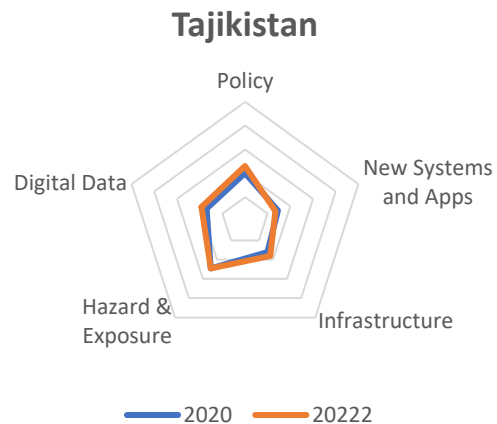
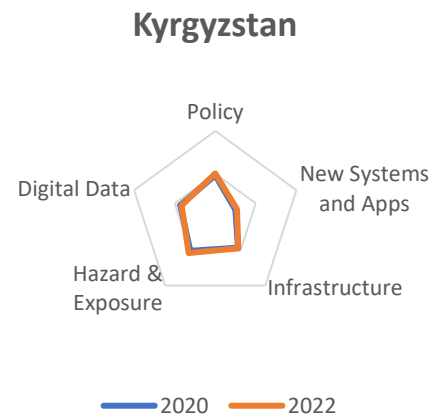
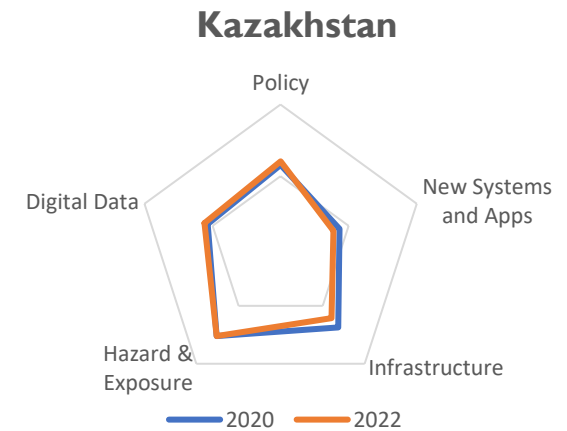
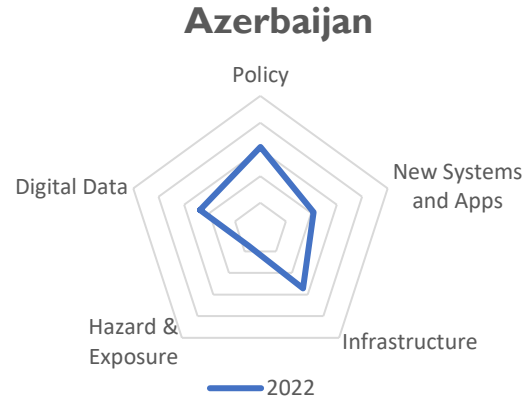
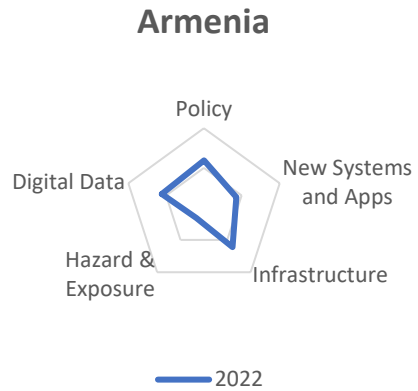
2020

Pillar	Name	Turkmenistan
ICT infrastructure as a physical foundation	Active mobile-broadband subscriptions per 100 inhabitants (0-100 % max)	15.30
	Fixed (wired) broadband subscriptions per 100 inhabitants	0.09
	Mobile cellular subscriptions per 100 inhabitants (0-100 max)	120.00
	Percentage of Households with a computer (0-100 % max)	10.73
	Percentage of Individuals using the Internet (0-100 % max)	21.25
ICT policy in different sectors	Adult Literacy (0-100% max)	99.70
	Government Effectiveness -2.5 - 2.5(max)	-1.16
	mean year of schooling	9.80
ICTs' role in data management	Online Service Index (0-1 max)	0.18

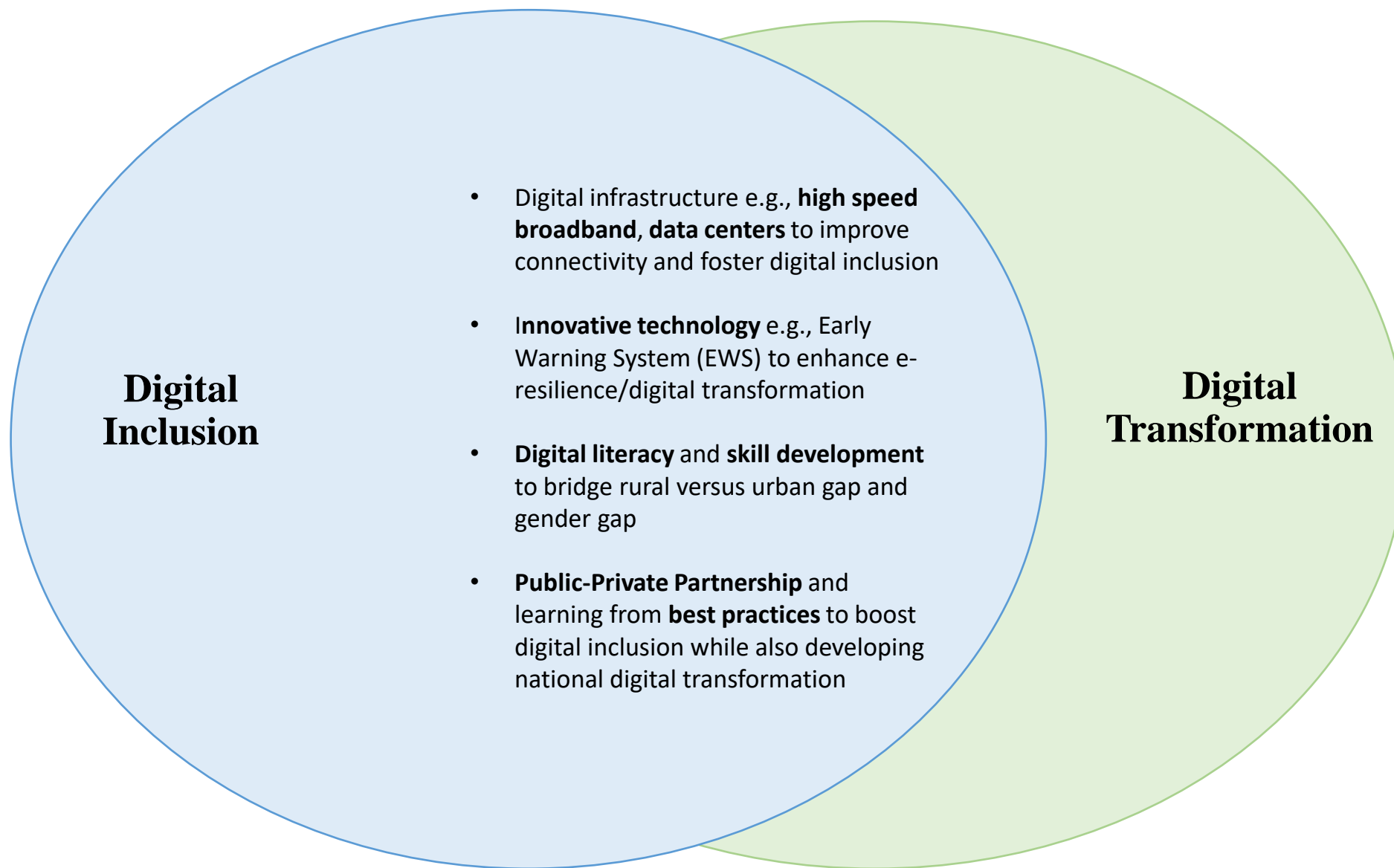
2022

Pillar	Name	Turkmenistan
ICT infrastructure as a physical foundation	4G mobile network coverage (0-100 % max)	67.00
	Active mobile-broadband subscriptions per 100 inhabitants (0-100 % max)	14.60
	Fixed (wired) broadband subscriptions per 100 inhabitants (0-100 % max)	0.17
	Internet access in schools (0-100 % max)	31.10
	Mobile cellular subscriptions per 100 inhabitants (0-100 max)	100.00
ICT policy in different sectors	Cybersecurity (0-100 max)	14.48
	Government Effectiveness -2.5 - 2.5(max)	-1.16
ICTs' role in data management	E-Participation (0 - 1 max)	0.20
	Online Service Index (0-1 max)	0.18

# E-Resilience Readiness through Radar Charts Illustrate the Entry Points to Address Issues of Digital Inclusiveness and Transformation



# Linkages between digital inclusion and digital transformation





# Best Practices from KFCC model: community credit cooperation fostered financial inclusivity in local communities

- MG Saemaul Geumgo model:
  - Best Practices involve capacity-building in local communities in Laos, Myanmar, and Nepal which fostered **financial inclusivity**
- Initiative to improve digital literacy, infrastructure, skill development etc. through internal and external digitalization

## Micro approach

The internal digitalization of KFCC's overseas support approach (Internal digitalization)

- **Development of Digital Operating Framework:** Proliferation of Innovative Financial/Transaction Services Based on Mobile
- **Linking Government/Local Communities/Cooperative Societies:** Creating a Sustainable Innovative Financial Ecosystem through Data Sharing and Communication
- **Promotion of Financial Education with a Savings Focus:** Development of Digital Tools and Resources for Promoting Financial Education
- **Digitization of Small and Medium-sized Enterprise/Startup Support Systems:** Regional Economic Growth and Job Creation
- **International Organization Cooperation System:** Building a Collaboration Framework with International Bodies
- **International Promotion System:** Utilizing Various Global Social Media Platforms in Collaboration with International Organizations

## Macro approach

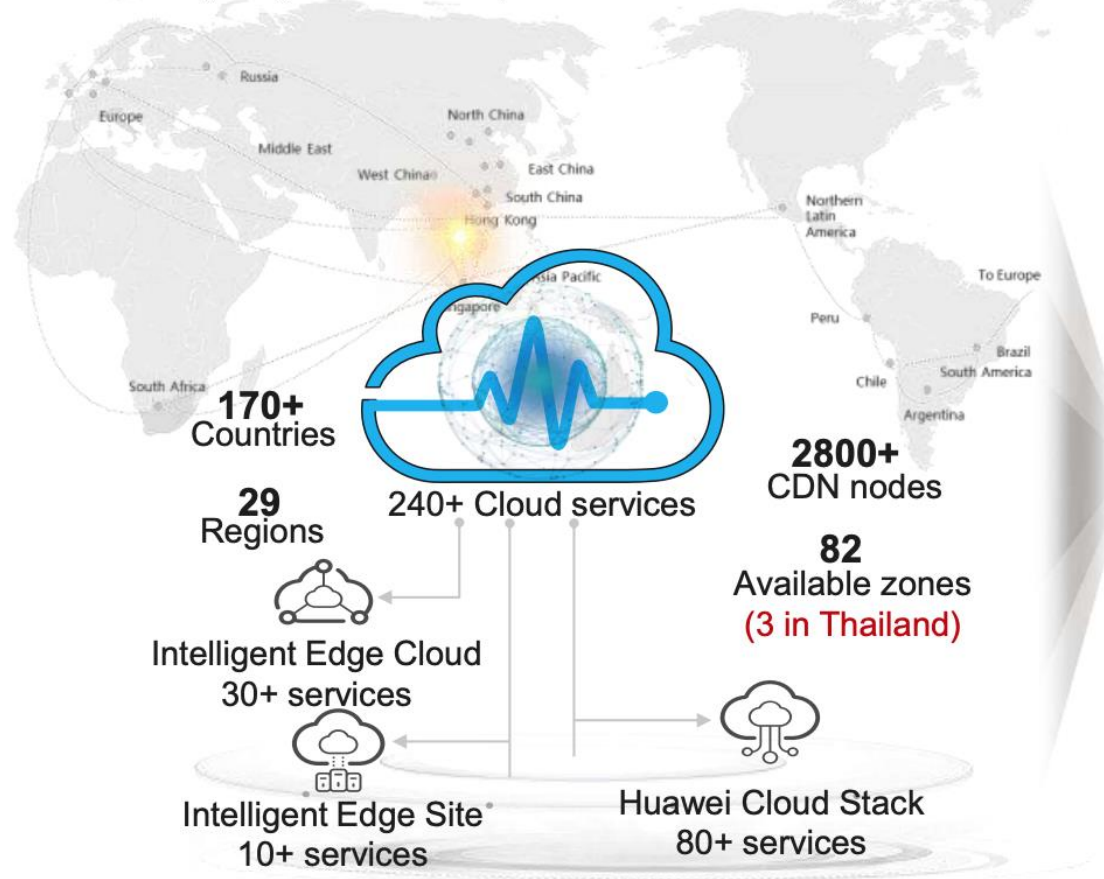
Digitization of Microfinance Systems in KFCC Member Countries (External digitalization)

- **Development of Digital-Based Financial Models:** Utilizing AI, Big Data, Blockchain, etc., and Tailoring to Local Environments and Cultures
- **Enhancement of Digital Data Infrastructure:** Digital Data Environment, Standardization, and Accumulation
- **Digital Competency Education and Training:** Improving Users' Understanding and Utilization of Digital Services
- **Support for Establishing Digital Financial Governance:** Securing Legal Foundations, Technologies, and Institutional Means
- **Knowledge Sharing and Transfer of Technical Experience:** Establishing Online Sharing Platforms and Organizing Conferences and Workshops

# Best Practices of Huawei: Cloud Tech Services Fostered Digital Transformation

## Huawei Cloud

Everything as a service (infrastructure/technology/expertise)



Rich experience in innovation, architecture, O&M and ecosystem

## Huawei Best Practices

- Sustainable digital transformation and digitalizing different aspect of society across different regions including health, education, and finances
- Best practices include the use of digital tools e.g., Huawei Cloud fostering **sustainable digital transformation**

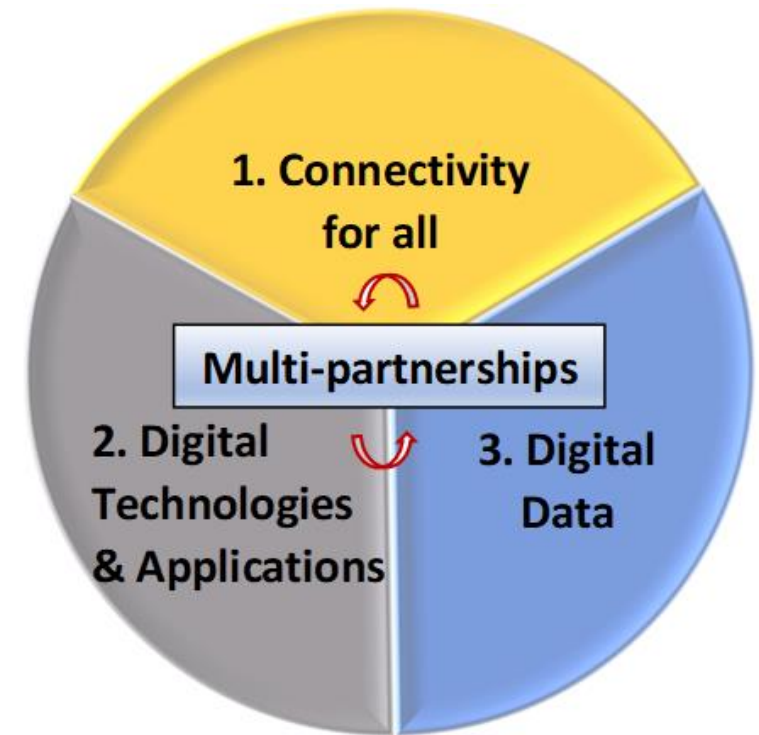
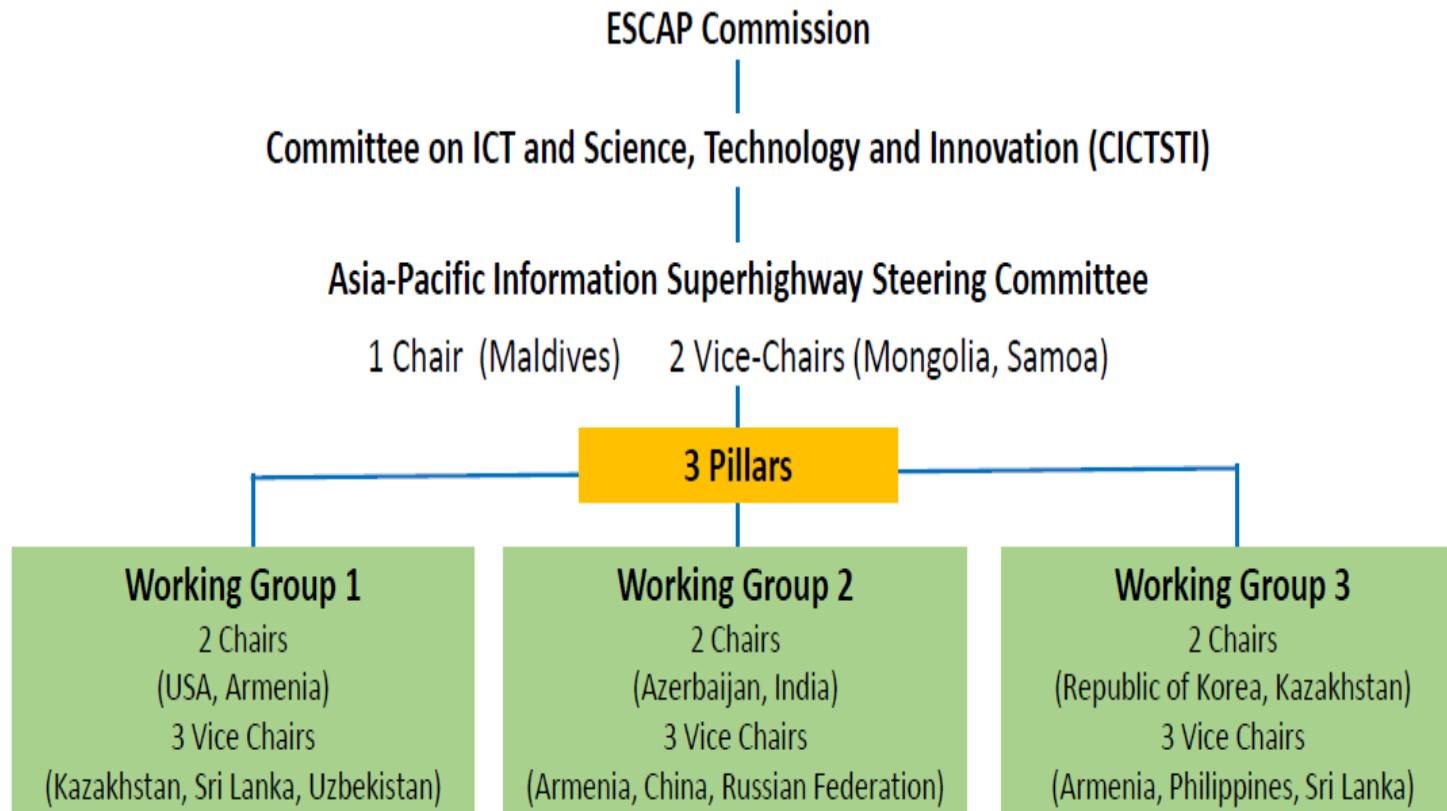


# The Way Forward

1. Widespread digital transformation can only be achieved through deep digital inclusion
2. Bridge digital divide through ESCAP Connectivity Tools including Infrastructure Corridor Simulator and Partnership Portal
3. Foster E-Resilience for digital inclusion and transformation through ESCAP E-Resilience Framework.
4. Sharing best practices and learning from different stakeholders to build local capacity i.e., MG Saemaul Geumgo model, Huawei Cloud, APIS Flagship Report 2022
5. Regional digital cooperation for building a resilient and inclusive digital economy through Asia-Pacific Information Superhighway (APIS) platform

# Digital Inclusion and Transformation under APIS Action Plan 2022-2026

**Technical-level cooperation** through three pillars ensures digital inclusivity and transformation presenting opportunities for multi-stakeholder involvement in digital development





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TurkmenTEL 2023  
Session 5 Special Focus  
Digitalisation Strategies -Building Sustainable, Ethical, Inclusive Digital Societies

14:30 hrs, Day 2, 10 November 2023, Ashgabad, Turkmenistan

**Aida Karazhanova, Economic Affairs Officer  
ICT for Development, ICT and Disaster Risk Reduction, ESCAP**

**Talking Points**

Your Excellencies, Distinguished Participants, Ladies and Gentlemen,

I am representing the secretariat of the Economic and Social Commission for Asia and the Pacific (ESCAP), which is the biggest of five regional UN commissions and the most inclusive intergovernmental platform in the Asia-Pacific region, promoting cooperation among 53 member States and nine associate members. Let me bring Asia and the Pacific regional perspectives. I will showcase a few examples, highlight definitions, specific challenges, and offer ESCAP tools and frameworks to address digital inclusion and transformation issues.

**Slide 3: Digital Inclusion and Transformation**

At the United Nations, we promote equitable, meaningful, and safe access to the Internet, the use, lead, and design of digital technologies, services, and associated opportunities for everyone and everywhere. Digital transformation requires the whole development paradigm change. We are talking about transitioning to the digitalised ecosystems that serve the development needs of individuals and society.

Digital inclusion envisages measures that close the digital divide and digital gap between gender, rural and urban, and marginalised groups, including persons with limited abilities. For example, in 2020, the global averages for internet use were 62 percent for all men and 57 percent for all women, irrespective of age, income and geography. In this regard, UNCDF invested in digital and financial solutions to improve digital literacy, regulations, and services for both men and women. China, through the Universal Service project invested over six billion USD for telephone communications in 133K villages through high-speed broadband connectivity. Fijian launched several apps for digital and financial inclusion, DigitalFiji, M-Paisa, PacFarmer.

**Slide 4: Overall Problem and Solution**

What causes the digital divide?

It appears that the main challenge is inadequate ICT infrastructure, digital literacy, and socio-economic indicators. These create digital exclusion of women and rural areas, leading to financial exclusion and the absence of climate resilience, all widening the digital divide.

A simple response and solution to the issue would, therefore, be to address the attention of policymakers on measures to improve ICT infrastructure and digital literacy, thereby engaging women and the rural population in digital transformation. Governments need to subsidise measures to address the digital divide and offer financial inclusion and e-resilience measures.

**Slides 5-7: Digital Landscape**

As you know, our annual flagship report, ESCAP's Asia-Pacific Digital Transformation Report of 2022, highlights the digital disparity in Asia-Pacific and offers conceptual policy frameworks on how to enable digital transformation. The darker shades of blue on the map, primarily in North America and Europe, illustrate greater digital transformation, while there are larger disparities in the Asia-Pacific region. This is further characterised by 'average download speed' across the region, where some member states have higher broadband speed and others do not. The Secretariat is currently updating the Flagship Report of ESCAP for the attention of the Asia and the Pacific Ministerial Conference on Digital Inclusion and Transformation, scheduled in 2024 in Astana, Kazakhstan.

#### Slides 8-9-10: Affordability and Accessibility

The Asia and the Pacific region have not achieved the 2% affordability target in 2022 in fixed-broadband basket prices. In this regard, East and North-East Asia outperform others on fixed-broadband service costs being only 0.89% of the GNI per capita. South and South-West Asia and the Pacific require more effort to achieve the goal, with service costs as high as 5.53% of the GNI per capita in South and South-West Asia, and 12.41% of the GNI per capita in the Pacific.

#### Slide 11: Disparities in Financial Inclusion

Examples of financial disparities was observed in three pilot study countries in 2018 in Kazakhstan, Kyrgyzstan, Mongolia. Bank account ownership and internet usage portray issues in inclusivity and accessibility to the digital economy. Demographic factors are determinants of inequalities, too. Since then, countries improved in several performance indicators. For example, Kazakhstan in ten years, raised from 46 in 2010 to 28 in 2022 on the e-Gov Index, shifted towards digital government services and using blockchain technology, space application systems.

#### Slides 12-13: Implications of Current Challenges at Societal, National and Regional Levels

The digital divide impacts digital transformation and inclusion, which has national implications in terms of digital literacy, gender gaps, and gaps between rural and urban areas. This further has implications for interoperability of tools and initiatives between member states which only exacerbates the existing digital divide.

#### Slide 13: ESCAP is mandated to enable DIT

ESCAP offers intergovernmental platforms (RoK in 2022 and RK in 2024), technical cooperation among ICT network through APIS action plan 2022-2026, breakthrough projects and analytical work to tackle digital inclusion and transformation.

#### Slide 14-15: ESCAP Connectivity Tools and E-Resilience

ESCAP offers a few connectivity tools. The 2023 progress reports on e-resilience dashboard, partnership portal for ICT co-deployment with transport and energy infrastructure, and the infrastructure corridor simulator. Focusing on E-Resilience, five pillars illustrate resilience of infrastructure, index of hazard and exposure, index on digital data, policies, and new system and apps. ESCAP E-Resilience dashboard for Turkmenistan illustrate improvements across different pillars from 2020 to 2022, although there is a challenge in data availability and

accuracy. You may find radar charts covering the five different pillars for different member states and a few working papers on the subject.

#### Slide 16: Digital Inclusion and Transformation overlaps

The venn diagram illustrates the overlapping nature of digital inclusion and transformation. To achieve both digital inclusion and transformation, the basic building blocks include: infrastructure, innovative technology, local human capacity (digital literacy and skills), as well as public-private partnership.

#### Slide 17: Best Practices: KFCC

KFCC's (Korean Federation of Community Credit Cooperation) showcases the best practices in addressing the digital divide. The model of **community credit cooperation fostered financial inclusivity in local communities** with thousands of members in these states and an investment of thousands of USD through a two-step approach at the micro level -internal digitalisation and macro level - external digitalisation. The case illustrates the improvement of digital literacy, infrastructure, skill development etc. ensured by the local communities. This model has been implemented in several local communities in Asia-Pacific states, including Lao PDR, Myanmar, and Nepal.

#### Slide 18: Best Practices: Huawei

Huawei's **cloud services exemplify the inevitable trajectory towards greater digital connectivity**, therefore, the need for sustainable digital infrastructure was addressed and therefore more digital inclusion and transformation was ensured. Huawei's example illustrates how digitalizing every aspect of society across different spheres, including health, education, and finances, requires a sustainable approach to improve socio-economic factors (which are crucial predeterminants of digital inclusion and transformation).

#### Slide 19-20: Way forward and the APIS Action Plan 2022-2026

1. Widespread digital transformation can only be achieved through deep digital inclusion
2. Bridge digital divide through ESCAP Connectivity Tools including Infrastructure Corridor Simulator and Partnership Portal
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5. Regional digital cooperation for building a resilient and inclusive digital economy through Asia-Pacific Information Superhighway (APIS) platform

ESCAP Secretariat is keen to collaborate with Turkmenistan and interested partners in delivering the APIS action plan through three working groups on Connectivity for All, Digital Technology and Applications and Digital Data.

Thank you for your attention.